

# LDS WESTMOND (PWSNO 1090219) SOURCE WATER ASSESSMENT REPORT

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October 31, 2002



## State of Idaho Department of Environmental Quality

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## SOURCE WATER ASSESSMENT FOR LDS WESTMOND

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like LDS Westmond, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for LDS Westmond* describes factors used to assess susceptibility to contamination. The analysis relies on information from available well logs; an inventory of land use and potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for LDS Westmond Well 2 is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** The LDS Westmond public water system serves a church facility located about 0.3 miles east of Highway 95 at Westmond, Idaho. There are currently 2 wells on the property. Well 1, used for irrigation, is disconnected from the drinking water distribution system. Well 2 is the source for potable water. No well logs are on file with DEQ. The depths of the wells and subsurface construction details are not known. When the system was inspected in 1996 and 2002, the cap on Well 2 was not vented and watertight.

**Well Site Characteristics.** Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zones delineated for your well. Soils in the well recharge zone are generally moderately well drained to well drained. Well-drained soils provide little protection against migration of contaminants toward the well. The soil structure above the water table at the well sites is not known.

**Potential Contaminant Inventory.** Land inside the recharge zone delineated for the LDS Westmond drinking water well is mostly undeveloped. The well is located in a grassy area northwest of the church between the building and parking area. A sewer line crossing the property passes within 5 feet of Well 2. 50 feet is the minimum separation distance between wells and sewer lines allowed under *Idaho Rules for Public Drinking Water Systems*. In addition to microscopic pathogens, sewers are potential sources of nitrates and other contaminants.

**Water Quality History.** LDS Westmond, under regulation as a non-community transient public water system, is required to monitor quarterly for bacterial contamination. In the period from January 1995 through the present only one quarterly sample was positive for total coliform bacteria. Follow-up testing was negative. Annual nitrate samples collected between 1996 and 2002 show concentration ranging from 0.063 to 1.21 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. The public water system file for LDS Westmond notes that the system failed to monitor for nitrates and total coliform bacteria during several reporting periods.

**Susceptibility to Contamination.** An analysis of the LDS Westmond drinking water well incorporating information from the public water system file and the potential contaminant inventory ranked Well 2 highly susceptible to microbial and inorganic chemical contamination because of the sewer line inside the sanitary setback zone. Susceptibility to synthetic and volatile organic chemical contamination is moderate. Unknown risk factors related to well construction and local geology account for most of the points in the final susceptibility score. The complete analysis worksheet for your well is on page 6. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

LDS Westmond is not in compliance with Idaho Rules for Public Drinking Water Systems. In July 2002 Panhandle Health District approved alternate sites for a new well that will meet sanitary setback requirements. DEQ will assess the new well's vulnerability to contamination following construction. When the new well is on line, it will be important to seal any unused wells on the property in accordance with Idaho Department of Water Resources regulations. Because improperly abandoned wells provide a direct conduit into the ground water, they can be a serious source of contamination. In the interim, the church needs to be especially vigilant about maintaining and testing the old well. The well cap, neglected since 1996, needs to be replaced with a vented, watertight sanitary well cap. More frequent monitoring for total coliform bacteria should also be considered.

With so many facilities to manage, the church might find it helpful to develop a written maintenance and testing schedule. Every system should have an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website (<http://www.state.id.us/deq/water/water1.htm>) to guide systems through the emergency planning process. Drinking water protection partnerships with any businesses in the capture zone and neighboring landowners should also be established. Some of them may not be aware that their property is in a sensitive area where household, agricultural or business practices could have a negative impact on public drinking water supplies.

The church should also investigate ground water stewardship programs like Home\*A\*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. The goal of source water protection is to maintain current water quality for the future.

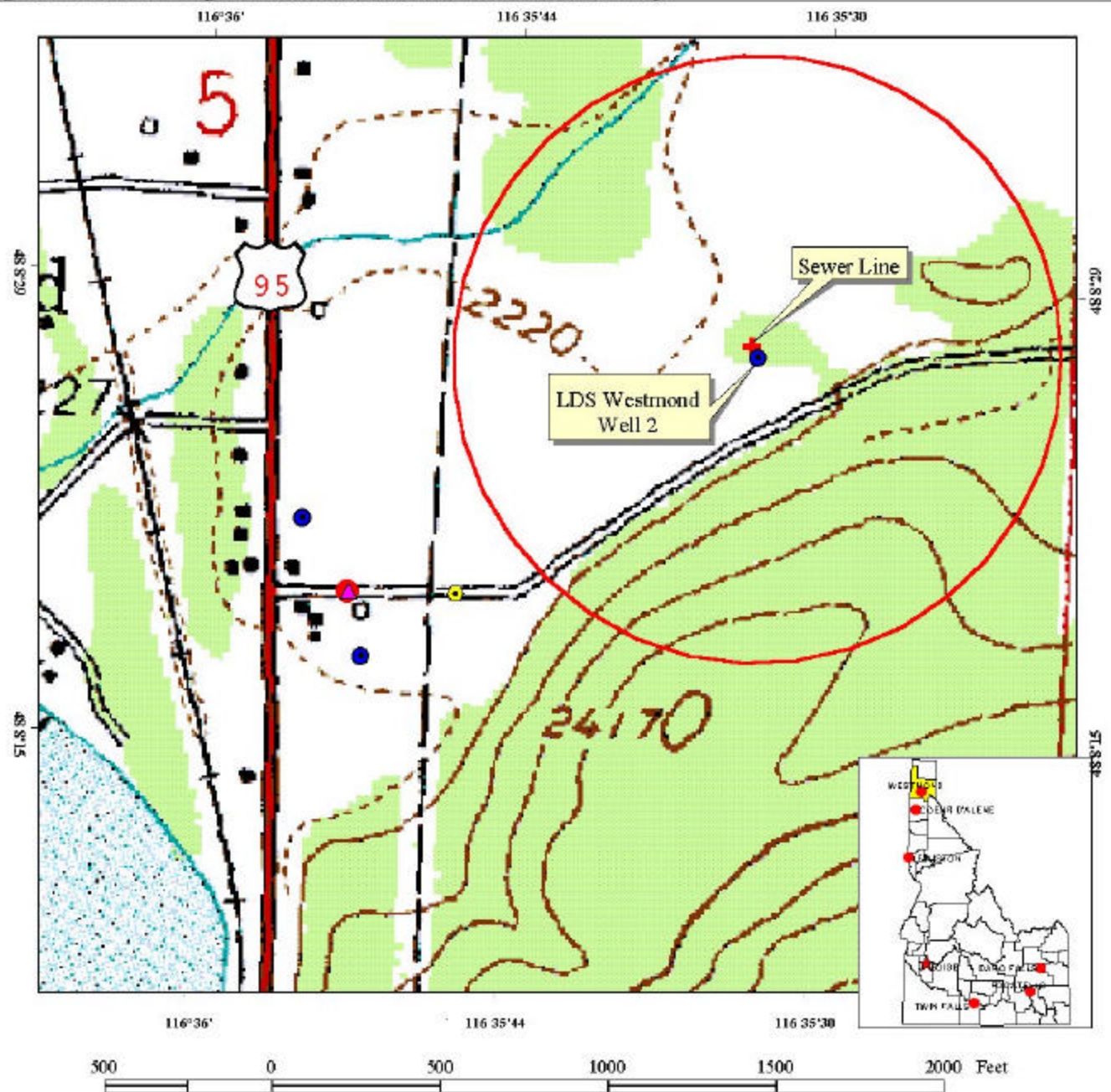
**Assistance.** Public water suppliers and users may call the following IDEQ offices with questions about this assessment and for help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us/deq/water/water1.htm>

Figure 1. LDS Westmond Delineation and Potential Contaminant Inventory.



PWS # 1090219  
LDS Westmond  
Well 2

**Ground Water Susceptibility**

Public Water System Name :

**LDS WESTMOND**

Well # :

**WELL 2**

Public Water System Number :

**1090219**

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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 2002				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	NO	1			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well protected from flooding	YES	0			
<b>Total System Construction Score</b>		<b>5</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	UNKNOWN	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
<b>3. Potential Contaminant / Land Use - SANITARY SETBACK</b>		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Sanitary Setback	Parking Lot	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	YES. Sewer Line 5 feet from well	<b>YES</b>	NO	NO	<b>YES</b>
<b>Total Potential Contaminant Source/Land Use Score - Sanitary Setback</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Potential Contaminant / Land Use - 1000-FOOT RADIUS</b>					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2 ) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>4. Final Susceptibility Source Score</b>		<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>
<b>5. Final Well Ranking</b>		<b>*High</b>	Moderate	Moderate	<b>*High</b>

\* Automatically ranked highly susceptible due to presence of sewer line in Sanitary Setback zone

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

**Final Susceptibility Ranking:**

- 0 - 5 Low Susceptibility  
6 - 12 Moderate Susceptibility  
> 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.